Expecting and Achieving Gains in Student Performance:

EVAAS Value-Added Report 2002-2004 for the Archdiocese of Indianapolis

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In the present environment of accountability, (No Child Left Behind - NCLB), schools are being held accountable to improve student performance based upon academic standards. This creates both opportunities and challenges for our Catholic schools. An opportunity will be given to parents from failing public schools to choose another school for their child. Voucher programs are already in place Washington, D.C., and others, like Indiana, are considering legislation on this topic. The challenge will be to prove that our Catholic schools are successfully improving student performance. We believe the following model will help guide our efforts.

Through a school improvement grant from Lilly Endowment Inc., the Archdiocese of Indianapolis has been able to partner with the Milken Family Foundation to implement the Teacher Advancement Program (TAP) in eight of our schools. TAP connects the elements of professional staff development, improved student growth and performance-based compensation. The archdiocese has been using the Terra Nova (CTB McGraw-Hill) standardized test to measure student gains in language, math and reading to measure the success of TAP and other initiatives. We have tested approximately 5,000 students in 22 schools in grades 2nd through 9th over the last three years. The test results have been used to determine if student performance is changing at the student, teacher, school, and district level. Here are the findings and explanation of the value-added model we have been using.

Method

Over the three years, we have compared test results using the value-added model developed by Bill Sanders through SAS EVAAS Institute in North Carolina. The assumption of this model is that for a student to show growth, that student must achieve a gain score that is greater than one year's growth. The performance model was developed by Sanders and used in the state of Tennessee to measure student performance. The Sanders value-added model is a mathematical (statistical) comparison of the student test data over time to determine gains in performance. As stated in the fact sheet from the SAS Institute, value-added gives us "more than a snapshot of current performance levels. It provides a precise measurement of student progress over time and a reliable diagnosis of opportunities for growth." (Fact Sheet, 2003)

Findings

After three years, the archdiocese is ready to report the performance findings based upon the 22 schools involved in the Lilly Endowment initiative using the value-added model. This is done by computing a district gain and standard error from the base year 2001-2002 in each of the three subject areas tested—language, math, and reading. Then standard score is computed from three years of performance data. Shown in the table below are the value-added scores for language (4), math (5), and reading (3). The value-added rubric score was developed by the Milken Family Foundation to be used to report the Sanders value-added standard score. The description of the values is described below.

Archdiocese of Indianapolis Terra Nova Value-Added District Report						
Year	**Subject**	**Reference Gain**	**District Gain**	**Std. Error**	**Std. Score**	**Value-Added Score**
2001-02	Language	100.0				
2002-03	Language	100.0	139.9	17.2		
2003-04	Language	100.0	127.1	14.1	1.9	4
2001-02	Math	100.0				
2002-03	Math	100.0	72.9	7.9		
2003-04	Math	100.0	128.4	8.2	3.5	5
2001-02	Reading	100.0				
2002-03	Reading	100.0	101.1	14.7		
2003-04	Reading	100.0	113.7	15.3	0.9	3

Milken Rubric for Value-Added Scores

Score of 1 = The district gain is 2 standard errors below the reference gain.
Score of 2 = The district gain is 1 standard errors below the reference gain.
Score of 3 = The district gain is neither 1 standard error above or below the reference gain.
Score of 4 = The district gain is 1 standard errors above the reference gain.
Score of 5 = The district gain is 2 standard errors above the reference gain.

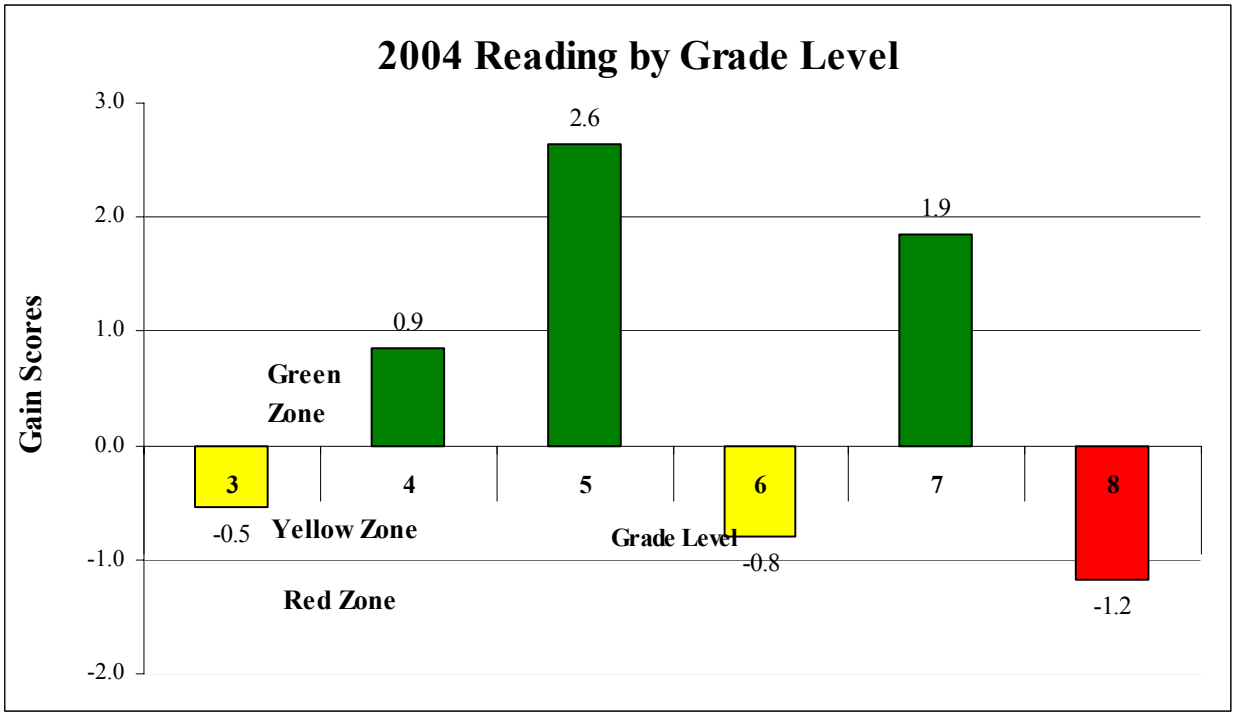
The results from the value-added report are very encouraging because significant gains were achieved in both language and math. In the value-added model, student performance gain in language and math is greater than the expected one year's growth. In math, it is twice what would be expected. For reading, we missed having the reading score being a value-added score by 0.1.

In order to achieve significant gains in all subject areas, it is important to use the data to focus our improvement efforts. Using EVAAS district report, the first step would be to break down the testing results. Using the grade level report, allows us to identify grade levels and/or subject areas where performance could be improved. In our specific case the identified focus area is reading.

Focusing on reading scores by grade level, the standard score is converted to one of four value-added scores using the criteria below. In the next chart, district-level student results are

shown for grades 3, 4, 5, 6, 7, and 8. At grades 4, 5, and 7, student performance is in the green zone. For two grades (3 and 6), the student gain score is in the yellow zone. For grade 8, the student performance is in the red zone.

Using the data to direct our interventions, the reading data would lead us to conclude that 8th grade students achieved less than the expected one year's growth. Students at grades 3 and 6 had a negative gain but not as critical as the 8th grade. A guiding question should be: If we improved student performance on the Terra Nova at the 8th grade level, would the improvement at this grade level be enough to move the district reading score to a gain score high enough to show improvement in reading for the archdiocese? The answer would be yes.



G Green Zone Estimated mean gain equal to or greater than reference gain.
Y Yellow Zone Estimated mean gain below reference gain by less than one standard error.
R Red Zone Estimated mean gain below reference gain by at least one, but less than two, standard errors.
R* Ultra-Red Zone Estimated mean gain below reference gain by at least two standard errors.

Finally, we need to remember that using district-level performance data only gives a general overall assessment. To achieve the student performance gains we desire it is critical to analyze the data at the school, teacher and student level. At these levels, we can determine which areas are most important to be addressed for each student. It must be kept in mind the overall goal is to have performance gains for all students.

Implications

We are presenting student performance at the district level to help the readers understand how the EVASS value-added model works. With this working knowledge, you will be able to understand the meaning of the value-added report received from SAS EVAAS at the other levels—school, teacher and student. Schools will be able to use this information to develop or improve plans with interventions and strategies to address student needs.

Following are some of our concerns and recommendations in using the value-added model in the future.

- It has been difficult for the archdiocese to follow a pure research model in implementing initiatives from the Lilly Endowment grant program. As we have found interventions that work, we have made those opportunities available to all schools. This has made it impossible to say that we have control schools where we can compare performance data to initiative schools. It has never been our intent to not to improve the performance of all students in order to do pure research.

- Indiana uses the Indiana Statewide Test of Education Progress-Plus (ISTEP+) to measure student performance on the Indiana academic standards. In the past, only students in grades 3, 6, 8 and 10 were tested. We used the Terra Nova test to have enough performance data for each grade level to do the value-added analysis. This school year (2004-2005) the ISTEP+ test was administered to all students in grades 3 through 10. We will be able to use our Terra Nova test results from the 22 schools and move to an ISTEP+ value-added report. The EVAAS model allows you to use the three year performance history without starting over. In this transition, we will begin to include the ISTEP+ data from the other 51 schools in the archdiocese. Once we are able to create reports based upon three years of ISTEP+ testing, the archdiocese will be able to create value-added reports for all 72 schools with approximately 24,000 students.

- The Indiana fall testing forces us to link student performance back to previous school year. For example, the third grade test really measures performance at the end of 2nd grade. In order to get the linkages with to the teachers that provide the student with the instruction that relates to the ISTEP+ test score, we link the test to the teacher from the previous school year. This is manageable as long as the teacher does not have a large number of students enrolling new in the fall and cannot be linked to the previous school year.

- With the gubernatorial change in Indiana, there has been a great deal of discussion about moving the ISTEP+ from a fall to spring test. The value-added model would adjust for this change. Our concern is that if this happens, there needs to be a plan for this transition

to guarantee that we do not lose a year of test data. For example, the year the change is made, students should be tested in the fall and spring.

Conclusion

The value-added model has allowed us to change how we compare student performance. In the past, we were comparing one student's achievement with another, not whether the student was improving. When you think about this, it tells us very little about whether the school has made any difference in improving individual student performance. The value-added model is a long-term commitment to assessment. Should we not expect all students to improve more than what is expected in a single year? If we do, then we can say that they have added value to their performance! We believe that the value-added model allows us to measure and determine if our Catholic schools are improving student performance.

References:

SAS Institute, Inc. 2003. *SAS® EVAAS® for K–12, Retrieved* March 14, 2005 from http://www.sas.com/govedu/education/evaas/fact_sheet_sept03.pdf.